

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte EDWARD P. FURLANI and
J. KELLY LEE

Appeal No. 1997-0907
Application 08/291,642¹

ON BRIEF

Before THOMAS, BARRETT, FLEMING, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 1 through 6, which constitute all the claims in the application.

¹ Application for patent filed August 17, 1994. According to appellants, this application is a continuation-in-part of Application 08/107,551, filed August 17, 1993, now abandoned.

Appeal No. 1997-0907
Application 08/291,642

Representative claim 1 is reproduced below:

1. A magnetically biased electromagnetic shuttering device for controlling the shutter blades of a camera, said device characterized by:

a yoke comprising a core and a coil, said coil being capable of receiving current produces a first magnetic field existing inside and outside said core;

a movable magnet that is coupled to the shutter blades, said magnet having a second magnetic field and being positioned adjacent said core so that said second magnetic field interacts with said first magnetic field; and

biasing means, separate from said yoke, for producing a third magnetic field, said biasing means is positioned adjacent said movable magnet in order to influence the motion of said movable magnet and to provide controllable detents for said movable magnet.

The following references are relied on by the examiner:

Shimada et al. (Shimada)	4,338,013	July
6, 1982		
Wang	4,973,866	Nov.
27, 1990		
Castor et al. (Castor)	5,155,522	Oct. 13,
1992		

Claims 1 through 6 stand rejected under 35 U.S.C. § 103.

As evidence of obviousness, the examiner relies upon Castor, further in view of Wang and Shimada.

Appeal No. 1997-0907
Application 08/291,642

Rather than repeat the positions of the appellants and the examiner, reference is made to the briefs and the answers for the respective details thereof.

OPINION

We sustain the rejection of claims 1 through 6 under 35 U.S.C. § 103 generally for the reasons set forth by the examiner in the Answer further in view of the following embellishments.

At the outset, we note that claim 1 recites in part "biasing means, separate from said yoke, . . . said biasing means is positioned adjacent said movable magnet." On the other hand, independent claim 4 also indicates that "said biasing magnet is positioned perpendicular to said movable magnet." and further adds a "means for adjusting the relative position between said biasing means and movable magnet," a feature also not present in independent claim 1 on appeal.

With respect to the stated rejection on page 4 in the Answer, the examiner indicates that Castor discloses the

invention substantially as claimed except for the claimed biasing means (set forth in both independent claims 1 and 4 on appeal) and the means for adjusting (set forth only in independent claim 4 on appeal). We agree with this assessment of Castor, which is easily validated by a general assessment of the figures of this reference and appellants do not assert otherwise in the Brief and Reply Brief. In what appears to be a home position, Castor's disclosed armature comprises the core 12 and the coil 13 with a cylindrically shaped movable permanent magnet 16 therewithin comparable to the claimed yoke and movable magnet. The showing in the home position in Figure 1 is better indicated with respect to the attached shutter blades in Figure 4. A similar showing is present in the comparison between Figures 2 and 5, and 3 and 6 as to the bi-directional rotatability of the movable magnet 16 with respect to the different directioned current flows which may be caused to flow in the coil 13. This is succinctly set forth in the SUMMARY OF THE INVENTION at column 2.

The various gaps shown in Figure 1 of Castor contribute to the orientation of the movable magnet 16 with respect to the electromagnet provided by the core 12 - coil 13

combination, such as to provide a stable power off position where the poles of the magnet 16 are approximately aligned with the center of the gap 75 and 76 as explained in the last paragraph at the bottom of column 3.

From an artisan's perspective, Castor describes what amounts to a stepper motor, such as that explicitly disclosed in Wang. The showing in the various figures of Castor, in addition to the use of the language describing the structure having an armature comprising a core 12 and a coil 13 with a cylindrically shaped movable magnet 16 capable bi-directional rotation placed within the core 12 of the armature, obviously would have suggested a stepper motor construction comparable to that explicitly disclosed in Wang.

Wang's stator winding 18 in Figure 1 comprises a coil wire providing the basis for an electromagnet stator housing encompassing the coil 18 and comprising field cap halves 10A and 10B with the addition of a rotor 24. As correctly identified by the examiner with reference to Figure 2 at the bottom of column 3, the annular bias magnet 30 is clearly coaxially located with the stator housing 10A-10B coil winding

18 and peripherally outside of the rotor 24. Annular bias magnet 30 is clearly separate from the yoke or stator housing in this reference in the manner claimed and in a manner consistent with the showing in appellants' disclosed Figure 4 for the bias magnet 8 as it relates to the movable magnet 16. The bias magnet 30 in Wang causes the rotor 24 to assume a home position established by the bias magnet 30 as illustrated in Figure 3A and Figure 4A.

On the other hand, Shimada utilizes similar language which would have suggested a stepper motor. The abstract at lines 3 and 4 state "[r]eciprocative rotating electromagnetic drive sources with stators and rotors reciprocate the shutter blades." The abstract goes on to illustrate that magnetic members on the stator itself facing the rotors hold the rotors at positions corresponding to the blades' start positions and are therefore movable to vary the gaps formed between the rotors and the adjustable magnetic members. What is significant as well about Shimada is that it teaches in a single reference a stepper motor- like structure for controlling shutter blades in a camera with the need for a home position holding mechanism of a magnetic nature to

prevent the shutter blades from inadvertently moving due to outside shocks or the like in a manner desirable to solve the problem isolated by appellants in the disclosed invention. The basis of this problem is isolated in the BACKGROUND OF THE INVENTION at column 1 of Shimada and its solution most succinctly summarized in the paragraph bridging columns 3 and 4 of this reference.

Thus, we do not agree with appellants' assertions at pages 5 and 6 of the principle Brief on appeal that Wang is nonanalogous art with respect to Castor and even Shimada since Shimada is the best example of linking the concept of stepping motor-type structures to stepping motors per se as shown in Wang. As well argued by the examiner at pages 6 through 8 in addition to our own earlier discussion in this opinion, it clearly would have been apparent to the artisan that Wang is not only pertinent to appellants' field of invention, it is also reasonably pertinent to the particular problem addressed by appellants in this disclosed and claimed invention. Considering the teaching value of the references themselves, there would have been clear reasoning or motivation for the artisan to have combined the collective teachings of the

references and that, therefore, there is no valid basis for appellants' assertion that the examiner has engaged in prohibitive hindsight reconstruction. Indeed, it is even arguable that the examiner's position may have been better stated by combining the teachings of Castor and Shimada together initially with additional supportive teachings from Wang to have achieved perhaps a stronger overall stated rejection.

The earlier noted feature of independent claims 1 and 4 on appeal of the biasing means being "separate from said yoke" is not distinguished over the use of the magnetic screw holding member 8 in the two embodiments in Shimada depicted in Figures 1 through 3. There is no requirement of the quoted claim language of the biasing means to be physically separate from the yoke 3 as in Shimada. Even though as shown in these figures that the holding means 8 is a part of or attached to the yoke 3, it is still identified as a separate element from the yoke. Indeed, it also provides a separate or additional magnetic field to effect the stated functions of the biasing means clause of claims 1 and 4 on appeal. Additionally, to the extent the armature (core 12 and coil 13) in Castor, being

analogous to the claimed yoke, essentially uses the yoke to provide some form of biasing means as identified in the paragraph at the bottom of column 3, the use of the separate magnetic screw holding member 8 in a similarly structured device in Figures 1 through 3 of Shimada would have led to an obvious incorporation into the structure of Castor.

Furthermore, the third embodiment in Shimada's Figures 4 and 5 describes in two manners physically separately located biasing means from the yoke 3 in these figures. The physical arrangement of the permanent magnet 23 with respect to the magnetic adjusting screw 28 on the plate 20 not only indicates that they are physically separate from the yoke 3, they provide the claimed biasing function, and each separately may be considered to be perpendicular to the movable magnet, which in the Figures 4 and 5 embodiment of Shimada comprises the movable coil or rotor 21. Finally, the adjustability feature at the end of independent claim 4 on appeal is clearly taught in all embodiments of Shimada.

On the one hand, while Shimada's adjustability features provide an improvement over the fixed position of the angular bias magnet 30 in Wang, the teaching value of Shimada to the

Appeal No. 1997-0907
Application 08/291,642

artisan obviously would have led to the artisan seeing the desirability of providing a screw-type adjustability of the physical location of the angular bias magnet 30 with respect to the other motor parts as depicted, for example, in Figure 2 of Wang for the advantages set forth in Shimada.

Appellants have presented no arguments with respect to any dependent claim 2, 3, 5, and 6. Therefore, they all fall with their parent claims 1 and 4. As such, the decision of the examiner rejecting claims 1 through 6 under 35 U.S.C. § 103 is affirmed.

Appeal No. 1997-0907
Application 08/291,642

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED

)	
JAMES D. THOMAS)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
LEE E. BARRETT))
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
MICHAEL R. FLEMING)	
Administrative Patent Judge)	

JDT/cam

Appeal No. 1997-0907
Application 08/291,642

Thomas H. Close
Eastman Kodak Company
Patent Legal Staff
Rochester, NY 14650-2201